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SEP 17 1997

FCC MAIL ROOM



**American Water Works Association
Government Affairs Office**

"Dedicated to Safe Drinking Water"

September 14, 1997

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W. Room 222
Washington, DC 20554

EX PARTE

Re: WT Docket No. 97-81

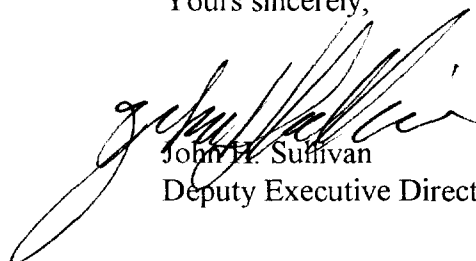
Dear Mr. Caton:

This is to notify you, pursuant to Section 1.1206 of the Commission's Rules, that on September 8, 1997 Jerry Obrist, Ken Palumbo, Dennis Green, Murray Todd, Steve Via and Jeff Sheldon representing Town of Lincoln, Washington Suburban Sanitary Commission, Detroit Water & Sewage Department, Montgomery Watson, American Water Works Association, and UTC met with David Horowitz to discuss the issues raised in WT Docket No. 97-81. The utility representatives described the critical use of multiple address systems (MAS) in the operation of water systems, discussed the current lack of MAS channels in many areas of the country, and urged adoption of the points raised in the parties' written Comments and Reply Comments filed in this docket. Copies of the written materials used during the presentation are attached to this letter.

Two copies of this notice are being filed for inclusion in the record of this proceeding.

Please let me know if you require any further information.

Yours sincerely,


John H. Sullivan
Deputy Executive Director

JHS
Enclosures

cc: John Borkowski, Senior Attorney

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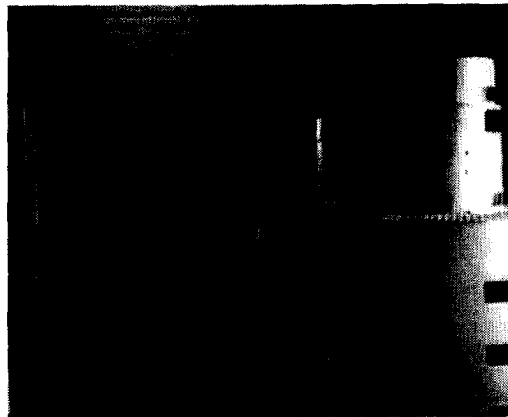
CH

Detroit Water & Sewerage Department

These are examples of equipment located in un-manned stations that is remotely controlled using SCADA. Below are two of 40 major pumping stations in this regional system.

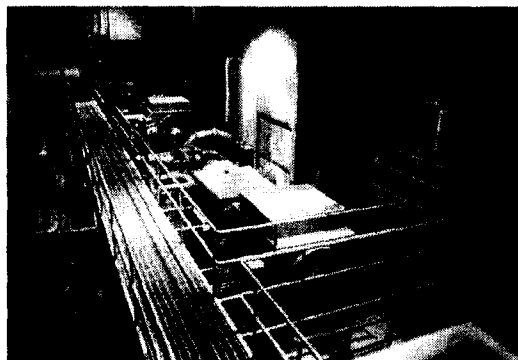


Conner Station
Eight 3000-HP storm water pumps



Conner Station
Four 400-HP sanitary pumps

The lower East side of Detroit is below river level. Loss of control of these pumps will result in either basements flooded with raw sewage or combined sewer overflows into the Detroit River. Local control of the storm pumps is not practical. Proper operation to prevent spills and floods requires information on levels in the 16-foot interceptor sewer running from the station to the sewage treatment plant at the opposite side of town.



Imlay Pumping Station - Eight 5700-HP potable water pumping

Water is pumped to another station 40 miles south, and the pressures at that station must be known to prevent bursting of the water main where it ends in a valley. 400 million gallons per day are received into a 20-million-gallon reservoir at this station. Should the source located 40 miles to the east fail, we have 20 minutes to stop the pumps before they are destroyed by pumping air. Likewise, we have 20 minutes to close the fill valves to prevent floating the roof off of the reservoir should the pumps lose power at this station. This station is located 60 miles from the Department's System Control Center, which communicates with this and the related stations through leased telephone lines that involve three different providers to complete the connection, and their unreliability requires five people in shifts to man the station continuously.

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Key Issues

Notice of Proposed Rule Making on

Amendment of the Commission's Rules Regarding Multiple Address Systems (MAS)

(WT Docket No. 97-81)

American Water Works Association

1401 New York Avenue, Suite 640, Washington D.C. 20005

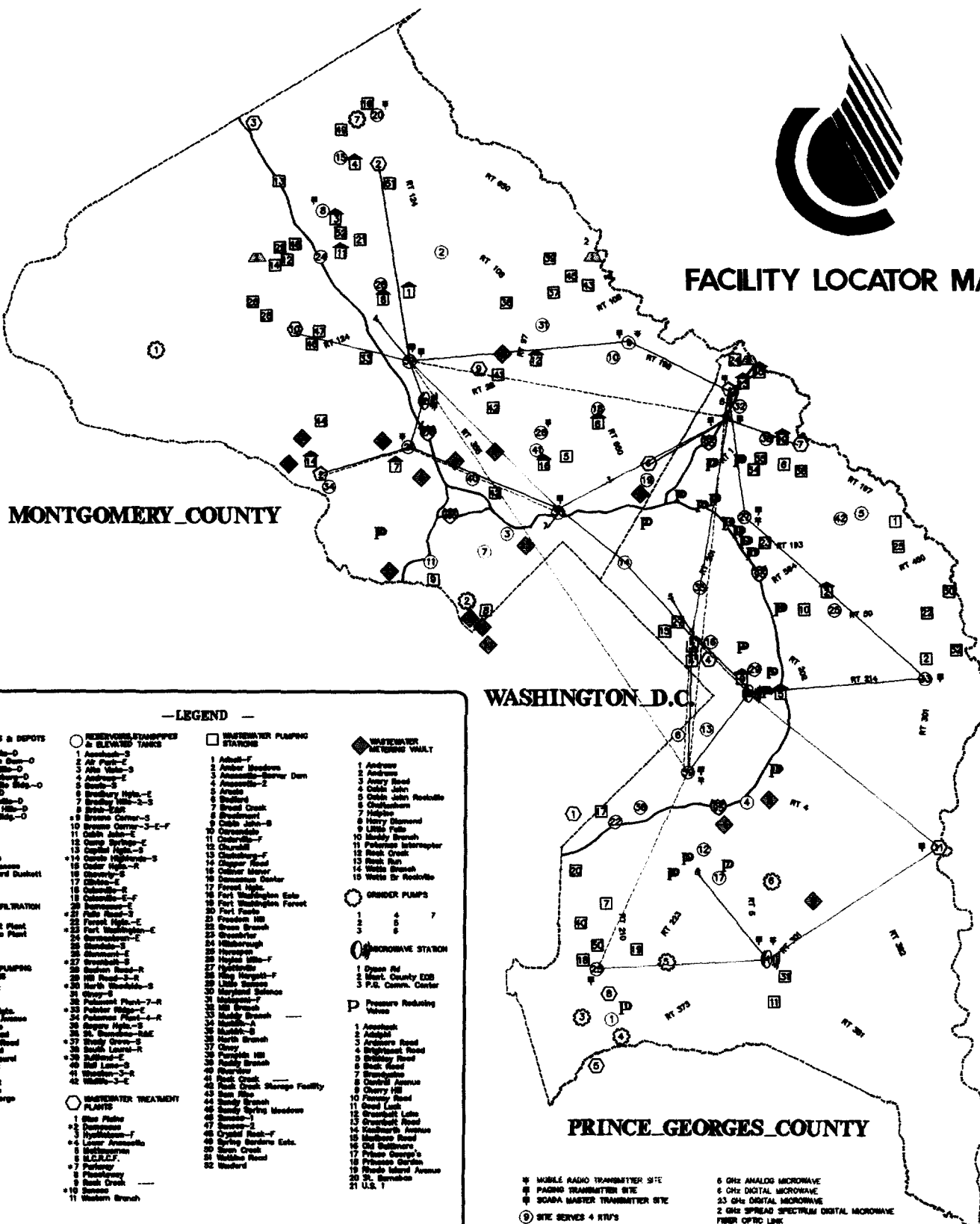
Data telecommunications within the spectrum affected by WT Docket No. 97-81 are critical to the public drinking water community for supply, storage, and distribution management. The American Water Works Association (AWWA) represents approximately 4,000 public water suppliers that treat and distribute more than 75 percent of the nation's drinking water. AWWA's comments seek to ensure that national spectrum management policy enhances the telecommunications capabilities of the public drinking water community.

1. MAS is a vital tool in the operation of utility systems.
2. There is increasing need for MAS spectrum among utilities.
3. The 928/952/956 MHz MAS channels should be preserved for private use. Entities that maintain the Nation's critical infrastructure are the predominant users of these bands and have a growing need for private, internal-use SCADA and telemetry systems.
4. At least 20 12½ KHz channel pairs in the 932/941 MHz band should be allocated for private wireless users that maintain the Nation's critical infrastructure.
 - 928/952/956 MHz channels are depleted in many areas.
 - Aside from speculative applications, the strongest demand for MAS has been from the critical infrastructure providers for private internal operations.
 - Comments in this docket indicate no significant support for commercial allocations in this band.

WASHINGTON SUBURBAN SANITARY COMMISSION



FACILITY LOCATOR MAP



—LEGEND—

OFFICES & DEPOTS

- 11 Annapolis
- 12 Beltsville
- 13 Beltsville
- 14 Beltsville
- 15 Beltsville
- 16 Beltsville
- 17 Beltsville
- 18 Beltsville
- 19 Beltsville

DAMS

- 1 Beltsville
- 2 Little Falls
- 3 T. Howard Dams

WATER FILTRATION PLANTS

- 11 Potomac Plant
- 12 Potomac Plant

WATER PUMPING STATIONS

- 1 Air Park
- 2 Air Park
- 3 Air Park
- 4 Air Park
- 5 Air Park
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WASTEWATER TREATMENT PLANTS

- 1 Blue Plains
- 2 Blue Plains
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MICROWAVE SITE

RESERVOIR/TANKS & ELEVATED TANKS

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WASTEWATER PUMPING STATIONS

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NOT IN USE

F - FUTURE

GRAPHED BY MED-WASH/ELECTRICAL ENGINEERING SECTION

WASHINGTON D.C.

11 MOBILE RADIO TRANSMITTER SITE
12 PAGING TRANSMITTER SITE
13 SCADA MASTER TRANSMITTER SITE
14 SITE SERVES 4 RTU'S
15 SITE SERVES 7 RTU'S
16 SITE SERVES 32 RTU'S
17 SITE SERVES 4 RTU'S
18 SITE SERVES 29 RTU'S
19 SITE SERVES 29 RTU'S

6 GHz ANALOG MICROWAVE
6 GHz DIGITAL MICROWAVE
25 GHz DIGITAL MICROWAVE
2 GHz SPREAD SPECTRUM DIGITAL MICROWAVE
FIBER OPTIC LINK
DASHED PATHS ARE FUTURE LINKS

SEPT. 1997

40 RTU'S SERVED BY MICROWAVE AND/OR WIRELINE

928 MHz
952MHz

4 miles

26 miles

SCADA Central Control
Ashland

Fiber Optic Link

Fiber Optic Link

OZONE PLANT

AERATION PLANT



900 MHz Digital
Radio Link



SCADA Central
Control Site



Wells

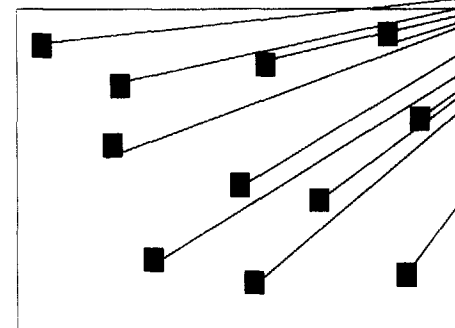


Remote Monitor/
Control Sites

PREPARED FOR
AMERICAN WATER WORKS ASSOCIATION

City of Lincoln

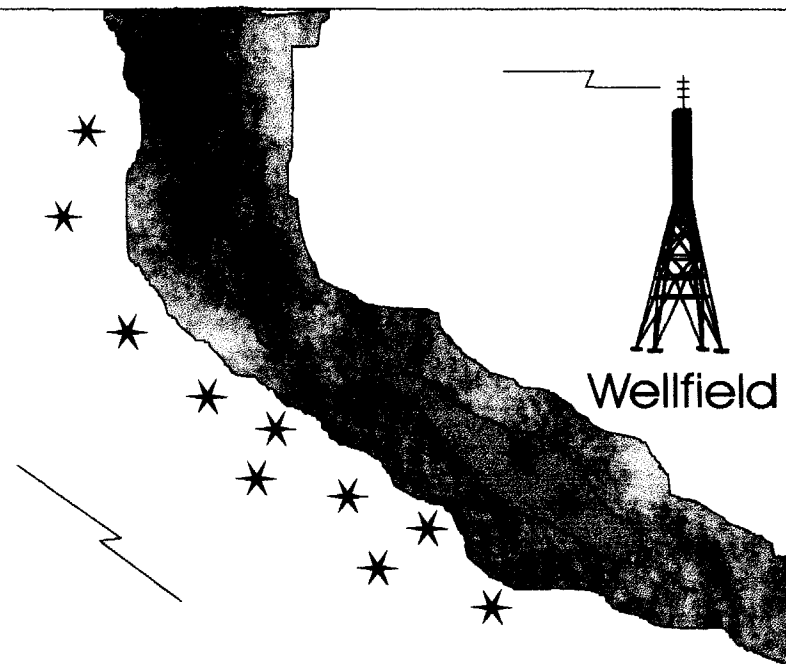
952 MHz
928MHz

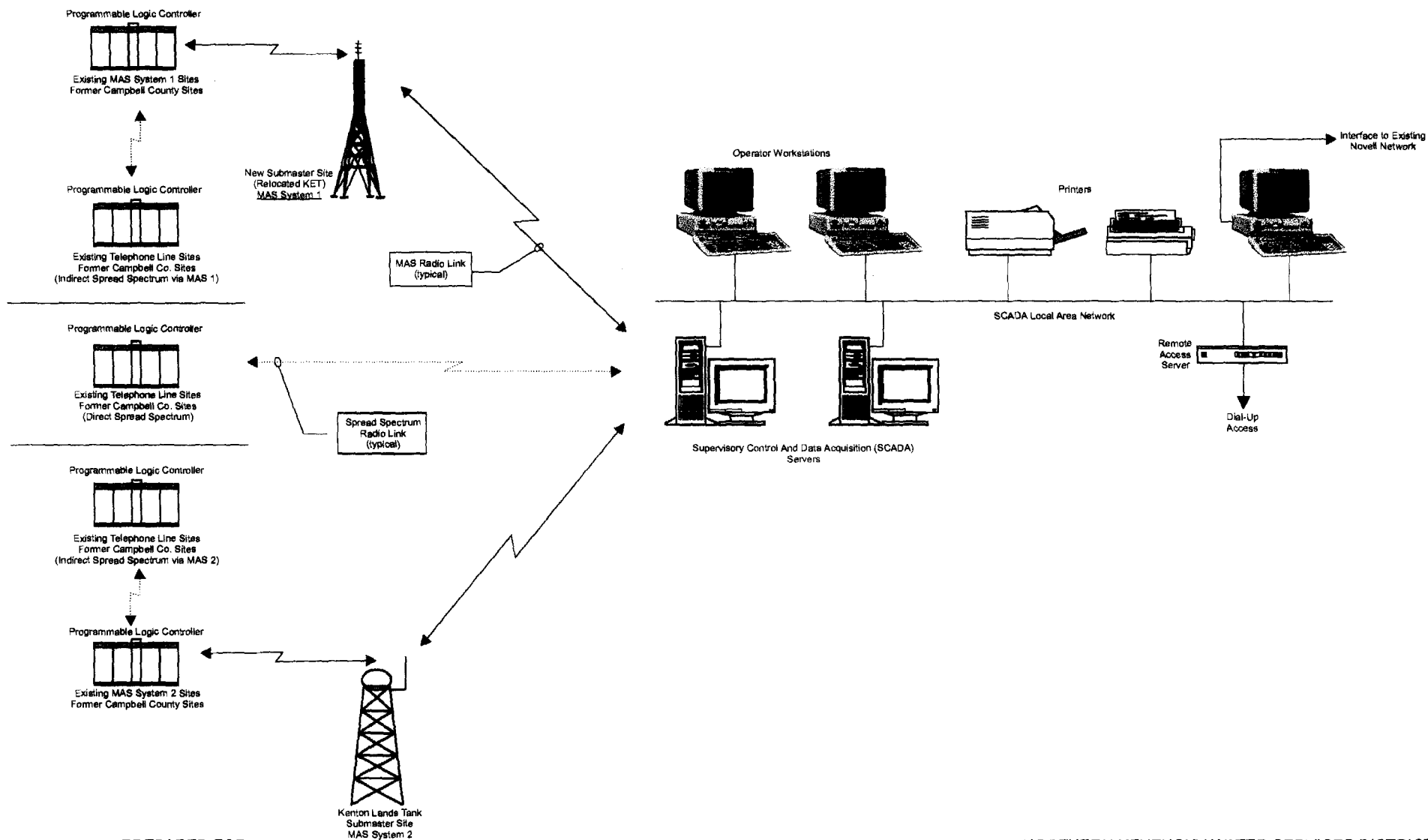


Cheney SCADA
Submaster

LINCOLN WATER SYSTEM
WIRELESS DATA COMMUNICATION

Wellfield





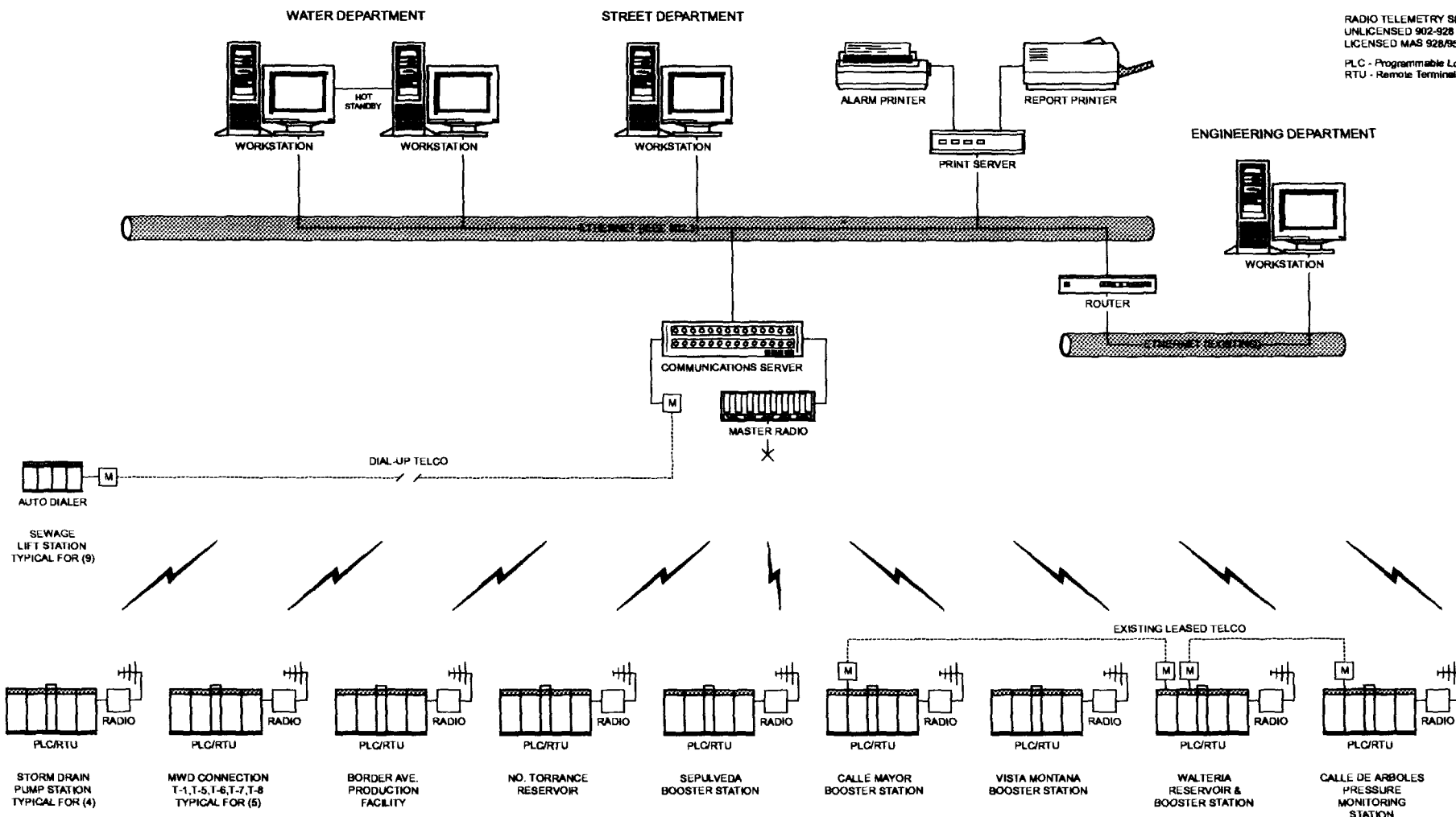
PREPARED FOR
AMERICAN WATER WORKS ASSOCIATION

NORTHERN KENTUCKY WATER SERVICES DISTRICT
SCADA MASTER PLAN

NOTES: [M] ANALOG MODEM

RADIO TELEMETRY SHALL BE UNLICENSED 902-928 MHz OR LICENSED MAS 928/952 MHz

PLC - Programmable Logic Controller
RTU - Remote Terminal Unit



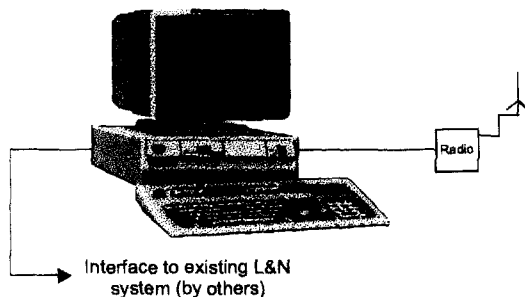
PREPARED FOR
AMERICAN WATER WORKS ASSOCIATION

CITY OF TORRANCE
SCADA SYSTEM CONCEPTUAL BLOCK DIAGRAM

FIGURE 1

Cholla Water Treatment Plant

80486 DX/33 Personal Computer



Notes:

1. Installation of PLCs, antennas, and radios by City of Glendale.

2. I/O for each TRU will consist of:

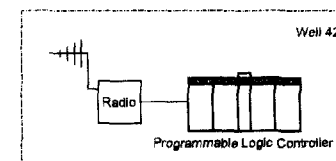
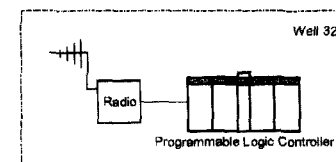
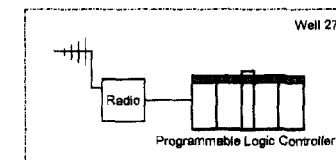
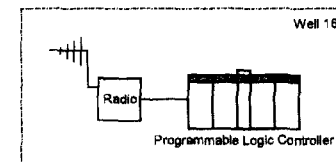
- 1 analog input for well flow
- 1 analog input for pressure
- 1 discrete input for well motor status (running/stopped)
- 1 discrete output for future well motor control

All analog signals will be linear 4-20 mAdc signals. All discrete signals will be dry contacts.

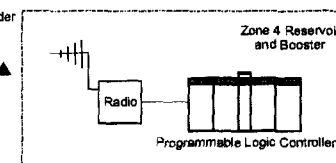
3. All field wiring (I/O, power supply, antenna feedline) by City of Glendale.

Antenna feedline cable furnished by Black & Veatch.

4. Option A illustrated. Under Option B, only three well sites would be implemented



Furnished and installed under
Zone 4 Reservoir
and Booster
Contract



PREPARED FOR
AMERICAN WATER WORKS ASSOCIATION

CITY OF GLENDALE
PILOT RADIO SCADA SYSTEM
BLOCK DIAGRAM

Information

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TELECOMMUNICATIONS – VITAL LINK TO PROVIDE CONTINUOUS WATER UTILITY OPERATIONS

Water operations at typical public water systems (PWS) involve specific telecommunication applications in the treatment and distribution of drinking water. For these applications, the most effective medium is radio:

- ☐ Voice
- ☐ Data collection and control (Supervisory Control and Data Acquisition, known as SCADA)
- ☐ Video



American
Water Works
Association

6666 West
Quincy Avenue
Denver, CO
80235

(303) 794-7711
Fax: 795-1440

Operational facilities at typical PWS include:

- | | |
|---|---|
| <input type="checkbox"/> Treatment plants | <input type="checkbox"/> System valves and regulators |
| <input type="checkbox"/> Pumping stations | <input type="checkbox"/> Flow, pressure, and quality monitoring |
| <input type="checkbox"/> Storage reservoirs and tanks | |

These facilities are dispersed over large geographic areas routinely measured in square miles and in some instances involving facilities separated by many miles. A treatment and distribution system must provide adequate potable water to:

- ☐ Individual residences
- ☐ Fire hydrants
- ☐ Medical facilities (i.e., hospitals, clinics, dialysis centers)
- ☐ Business and industry

It is significant to note that water system distribution piping and storage capacity is normally designed to meet fire flow requirements rather than normal water usage demands. This design requirement results in larger storage facilities, pumps, and water mains--all facilities which are managed using SCADA.

SCADA systems consisting of radio-based real-time control systems are critical to PWS operations. SCADA systems are used to control the remotely located treatment and distribution facilities described. For example SCADA systems are used to:

- ☐ Control and monitor water quality in water treatment plants and water distribution systems.
- ☐ Optimize pumping operations to maximize system operating efficiency
- ☐ Maintain water levels in storage reservoirs
- ☐ Control distribution system pressures
- ☐ Deliver an adequate supply of water to sustain fire flows
- ☐ Security

SCADA systems also allow facility automation, where the operations of a water treatment plant(s) and associated supply facilities are controlled from a central location. Remote operation is critical to coordinating the operation of equipment many miles apart.

SCADA plays a critical role in provision of a safe drinking water supply. With the increasing awareness of microbial and chemical contaminants and their potential public health impacts, continuous monitoring of water quality parameters throughout the distribution system become critical. Critical control parameters are collected from monitoring points in the water treatment and distribution system using SCADA systems. Data managed includes:

- ☐ Pressure levels, continuous pressure control is a tool to prevent ground and surface water from infiltrating into distribution facilities, providing a 24 hour check on system integrity.
- ☐ Monitoring of water chemistry at wellhead or surface water intake facilities to insure that treatment plant operation is optimized (water may subsequently reach the treatment plants in minutes requiring electronic communication).
- ☐ Providing pressure and flow information not available locally but critical to the safe operation of equipment.
- ☐ Monitoring intrusion to prevent vandalism or sabotage.

Commercial communications providers universally lack one or more of features vital to providing service reliable enough to substitute for PWSs operated systems. Private internal radio-based communications systems provide levels of reliability required by utility systems, particularly those that protect the public health like drinking water systems.

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American Water Works Association
Government Affairs Office

"Dedicated to Safe Drinking Water"

April 21, 1997

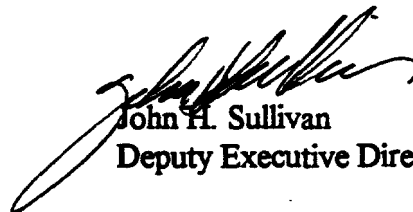
Federal Communications Commission
Room 222
1919 M Street N.W.
Washington D.C. 20554

**Re: Notice of Proposed Rulemaking, Amendment of the Commission's Rules
Regarding Multiple Address Systems (MAS) (WT Docket No. 97-81)**

Dear Commission Members:

Enclosed are the comments from the American Water Works Association on *Notice of Proposed Rulemaking, Amendment of the Commission's Rules Regarding Multiple Address Systems* (WT Docket No. 97-81). If you have any questions on these comments, please feel to contact myself or Steve Via in our Washington Office.

Yours sincerely,


John H. Sullivan
Deputy Executive Director

Enclosures

cc: AWWA Telecommunications Technical Workgroup
Jon DeBoer
Alan Roberson
Dan Pedersen
Steve Via
Fred Pontius

**Final Written Comments on the
Notice of Proposed Rule Making
on
Amendment of the Commission's Rules Regarding
Multiple Address Systems (MAS)**

(WT Docket No. 97-81)

Submitted to:
Federal Communications Commission (FCC)
1919 M Street N.W.
Washington D.C. 20554

Submitted by:
American Water Works Association
1401 New York Avenue, Suite 640
Washington D.C. 20005
(202) 628-8303

April 21, 1997

Specific recommendations are as follows:

- (1) We oppose the proposed transfer arrangement of existing MAS channels to Economic Area (EA) licensing status in the 928/952/956 MHz band. EA licensing in the MAS band will promote confusion, interference, and ineffective spectrum use.
- (2) We suggest relocating all existing, and allow no new commercial subscriber-based licenses in the 928/952/956 MHz band.
- (3) We recommend the preservation of 100 percent of all channels in the 928/952/956 to satisfy internal operational communications needs for private, non-subscriber MAS application use only (including quasi-public safety entities). Any currently unused channels in this band must be protected from speculative and subscriber based applicants. The conclusion that the 928/952/956 MHz band should be designated exclusively for private, internal operational use as originally intended is laudable and long overdue. A narrow and specific definition of private internal operations use needs to be promulgated.
- (4) We suggest relocating commercial subscriber-based service entities to other spectrum.
- (5) We believe that operation of mobile remotes in the MAS band is contrary to the intent of the Fixed Microwave Service and, therefore, no primary mobile service should be added. MAS licenses should maintain current point-to-multipoint configuration and be **site specific**. MAS band should, to fulfill the needs and objective of its initial design, stay with its original allocation of fixed-point to multipoint service only. Applicants proposing mobile operations on a primary basis should consider other radio services where the proposed method of operation is accepted standard of operation.
- (6) To meet the needs of the quasi-public safety entities and other private non-subscriber agencies, we recommend a twenty channel set aside in the 932/941 MHz band be established to ensure adequate spectrum is maintained for operation of critical national infrastructure (i.e. electric, gas, and water utilities). Since the 932/941 MHz band was allocated to provide relief for the exhausted 928/952/956 MHz band, it is in the public interest to re-examine those MAS

**Final Written Comments on the
Notice of Proposed Rule Making
on
Amendment of the Commission's Rules Regarding
Multiple Address Systems (MAS)
(WT Docket No. 97-81)**

L. INTRODUCTION

The American Water Works Association is pleased to have the opportunity to comment on the Notice of Proposed Rulemaking (NPRM) on the *Amendment of the Commission's Rules Regarding Multiple Address Systems*. The American Water Works Association (AWWA) is an international, non-profit, scientific and educational society dedicated to the improvement of drinking water quality and supply. Founded in 1881, the Association is the largest organization of water supply professionals in the world. Our 55,000 plus members represent the full spectrum of the drinking water "community": treatment plant operators and managers, environmentalists, scientists, academicians, and others who hold a genuine interest in water supply and public health. Our membership includes approximately 3,900 public water suppliers which treat and distribute about 75 percent of the nation's drinking water.

The comments provided herein reflect the consensus of the AWWA, which, given the depth and breadth of its representation, also reflect the predominant view of the nation's public water systems (PWSs) and drinking water professionals. It is therefore appropriate that these AWWA comments be heard on behalf of the drinking water community in general.

These comments have been prepared with an intended spirit of cooperation. Only through an open sharing of expertise and information will the public's health be protected. With this in mind, we would like to recognize and acknowledge the Federal Communications Commission's (FCC's) openness to discuss and understand the issues surrounding this and other recent rulemakings. These comments are AWWA's third comments to the FCC on proposed rulemakings, and we look forward to continuing to work with the FCC so that the perspective of the drinking water community can be better understood by the Commission and their staff. These comments are organized with general

Specific recommendations are as follows:

- (1) We oppose the proposed transfer arrangement of existing MAS channels to Economic Area licensing status in the 928/952/956 MHz band. EA licensing in the MAS band will promote confusion, interference, and ineffective spectrum use.
- (2) We suggest relocating all existing, and allow no new commercial subscriber-based licenses in the 928/952/956 MHz band.
- (3) We recommend preserving 100 percent of all channels in the 928/952/956 to satisfy internal operational communications needs for private, non-subscriber MAS application use only (including quasi-public safety entities). Any currently unused channels in this band must be protected from speculative and subscriber based applicants. The conclusion the 928/952/956 MHz band should be designated exclusively for private, internal operational use as originally intended is laudable and long overdue. A narrow and specific definition of private internal operations use needs to be promulgated.
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- (6) To meet the needs of the quasi-public safety entities and other private non-subscriber agencies, we recommend that a twenty channel set aside in the 932/941 MHz band be established to ensure adequate spectrum to maintain operation of critical national infrastructure (i.e. electric, gas, and water utilities). Since the 932/941 MHz band was allocated to provide relief for the exhausted 928/952/956 MHz band, it is in the public interest

With the proliferation of 929 MHz private carriers paging under Rule Part 90.494, which authorized a maximum of 3500 watts ERP, increases in the noise floor and interference has rendered portions of many MAS systems in major metropolitan areas unusable (including those cities listed above).

The technical ramifications of locating these high power paging services adjacent to the low power MAS band was not considered. As a result, PWSs and other utilities are forced to use more MAS spectrum in order to achieve the same levels of performance. This scenario places these entities in a precarious position due to the severe lack of available MAS spectrum. We seek to ensure that similar results are avoided in proposed new service allocations such as those described in the subject Notice of Proposed Rulemaking, and to ensure that additional avenues for obtaining much needed MAS authorizations for PWSs and other utilities result from this action..

Background Paragraph: 7

The conclusion that the 932/941 MHz and 928/959 MHz MAS bands should be designated for subscriber services is based on misleading premises. Although 50,000 plus applications for the forty channel pairs in the 923-932.5 and 941-941.5 MHz bands were received, and over 95 percent were filed by applicants seemingly proposing to provide subscriber-based service (a figure for which additional documentation is requested), one should not conclude that the public interest is necessarily being served by re-characterizing this spectrum as a commercial service.

A fundamental reason for designating this spectrum for MAS use was to relieve the demand created by the exhaustion of the 928/952 MHz MAS channels. There is still a tremendous shortage of MAS frequencies to satisfy utility requirements today.

Since a first-come-first served methodology was selected to award licenses in the 932-941 band, any informed investor with the \$155.00 filing fee could apply for a license, having the same chance of selection as a bonafide prospective MAS user. The similar selection process for the 800 MHz Specialized Mobile Radio Service (SMR) licenses demonstrated the potential of financial benefit for being awarded a license. Speculators learned from the financial windfalls obtained in that process, and applied that knowledge in submitting multitudes of applications for 932/941 MHz authorizations.

We disagree that the magnitude of speculative applications logically leads to a conclusion that all but 5 of 40 channels in the 932/941 MHz spectrum should be allocated for commercial subscriber use. Clearly, the magnitude of bonafide private, internal MAS applications (a number of 2,500 is derived from the figures provided in the Notice of Proposed Rulemaking) indicates a large legitimate need for MAS authorizations. This supports, the original rationale for designating this spectrum for MAS use to relieve the demand created by the exhaustion of the 928/952 MHz MAS channels in 1992.

In regard to other spectrum allocations, a cursory check of licensing in the 932.5-935/941.5-944 MHz point-to-point band seems to be underutilized in many parts of the country and could feasibly supplant exhausted MAS channels.

Paragraph: 12

Many of the channels within the 928-928.85 and 952-952.85 MHz bands, including the original Power Radio Service channels, appear to have been licensed by entrepreneurs to provide subscribers service to a speculative customer base. Many of the 956.325-956.45 MHz channels are licensed to paging companies as simulcast links.

All (100 percent) of these channels could be used to satisfy internal communications needs of public safety, business, and industrial entities even if there was no conflicting competition from for-profit private carriers, and the demand for channels will still not have been met. As such, any currently unused channels in this band (928/952/956 MHz) must be protected from speculative and subscriber-based applicants. The band should be classified for use only by private, internal systems having no fee-for-service application, as proposed in the following paragraph.

Paragraph: 13

The conclusion that the 928/952/956 MHz bands should be designated exclusively for private, internal use as originally intended, is laudable, if not long overdue. A more narrow and specific definition of private internal use needs to be promulgated. It is necessary to distinguish those applicants who use this spectrum exclusively for internal purposes without any fee-for-service access relationship to outside entities from others where this relationship exists.

The five channel pair set-aside for Federal Government/Public Safety use is commendable, but inadequate. As MAS technology continues to find future applications, these sectors will vastly increase their use, creating additional demand for channels.

In addition, a set-aside process is strongly advocated for private entities who do not qualify under the strict Public Safety eligibility rules. We advocate that a set-aside of 20 channels be established for private, internally used MAS systems; certainly no fewer than 10 channels should be set-aside for the needs of national critical infrastructure providers. Specifically excluded from this set-aside are MAS systems which generate revenue through a fee-for-service arrangement.

The eligible entities for the set-aside channels includes PWSs, utilities and other quasi-public safety agencies, in addition to several other classifications of businesses. The set-aside is necessary, at least for quasi-public safety entities, to ensure adequate spectrum in this band to maintain operation of critical national infrastructure. Justification for these channels and their use by PWSs and other utilities is based on the following:

- (1) In most metropolitan areas, these quasi-public safety entities operate their real-time monitoring and control systems using several traditional MAS channels (928/952 MHz), occupying between 20 and 40 percent of the allocated channels. A similar percentage of the 932/941 MHz channels will be required to sustain normal growth of these systems.
- (2) Additional application technologies for wireless operations are being implemented by these entities as they are continually adapting to changing needs of their "customers" (i.e. the public). Wireless data access to enterprise networks, real-time customer access to billing data, and many other applications necessitate use of additional spectrum.

We suggest either a strict set-aside for these non-fee-for-service channels, or an arrangement between this group of entities and the Federal/Public Safety entities, whereby these channels would also be available to Federal and Public Safety agencies on a case-by-case basis if their designated five channels were to become exhausted in a geographic area.

services from being allocated adjacently. An example of this oversight is evident in the placement of the MAS and paging services mentioned previously in Background Paragraph. 4.

Paragraph: 17

We concur that EA's are a suitable choice of geographic licensing of subscriber-based MAS systems as mandated. However, an alternative of solely licensing EA's to applicants would be to allow incumbents, as well as new applicants, to continue to apply for licenses on a site specific basis, and as systems develop that serve an EA, consolidate those licenses for geographical licensing. We do not agree, however, that EA's mirror the size and development of existing private MAS systems. Private systems have a size and shape tailored to the particular internal business objectives of the licensee. This size is many times governed by the political "jurisdiction" of the agency, its customer service area, and communications performance requirements.

Paragraph: 18

We do not agree with a regional or national set-aside of selected 932/941 MHz channels, in pattern after Personal Communications Services (PCS) allocations. The PCS radio service was conceived as a regional to nationwide service. Proponents of a nationwide MAS service should be able to identify suitable spectrum in other areas, such as the narrowband PCS band. Allocating channels exclusively for regional or nationwide use is inappropriate and contrary to the intended application and scope of the MAS radio service.

Paragraph: 19

As commented above, granting of any EA or subscriber-based licenses in the 928/952/956 MHz band is inappropriate for spectrum conservation and interference reasons. Interference protection issues described in this paragraph are substantiation for this position. With widespread use of these channels in MAS SCADA per-site licensed operation, we feel that any EA based authorization in this band will result in un-reconcilable interference with critical, in-service systems. The criticality of these systems is evident in the need for uninterrupted supplies of water, electricity, gas, and petroleum to the citizens of the country.

Paragraph: 23

We strongly disagree with the proposed transfer arrangement of existing MAS channels to EA status in the 928/952/956 MHz band. Any such transfer, along with EA licensing of the new licensee, will result in harmful interference with existing critical SCADA MAS applications used for public infrastructure maintenance and operation. In addition, lack of available channels for traditional private MAS in this band suggests that "freed-up" channels should be made available exclusively to these private (quasi-public safety) applications. Similarly, negotiated transfers of assignments should be restricted to operations exactly matching the original licensees authorization.

In major metropolitan areas, potential applicants in the PWS - utility arena have been waiting for years for a MAS frequency pair to become available. To arbitrarily transfer spectrum from an incumbent to an EA with cancellation of the incumbent's license, is a disregard of the spectrum needs of other private systems.

Channel transfer to an EA license in these circumstances will undoubtedly result in harmful interference to private MAS incumbents due to the size of the EA and its overlap with incumbent MAS service areas.

Paragraph: 24

Spectrum limits are in the public interest because they reduce channel hoarding for speculative interests. Minimum loading requirements should also be a prerequisite for retaining existing spectrum and obtaining additional channels.

We concur that there should be a limit on the number of MAS channels that a single licensee may hold in each geographic area and with the imposition of a 45 MHz cap on the aggregation of cellular broadband PCS and SMR spectrum within a geographic area.

Paragraph: 25

The failure to impose aggregation limits on EA licensees will foster development of a new monopolistic industry, spectrum re-sellers. This will have the effect of preventing entities with limited

Paragraph: 29

See Paragraph. 28, above.

Paragraph: 30

Permitting disaggregation for EA licensees may promote spectral efficiency for provision of subscriber services.

Paragraph: 31

The parties of EA licensees in a disaggregation agreement should be jointly and separately responsible for meeting construction requirements, substantial service requirements, and the other terms of the original authorization.

Paragraph: 32

See Para. 31, above.

Paragraph: 33

Providing both partitioning and disaggregation for EA licensees may promote spectral efficiency for providing subscriber services. All parties to the agreements should be expected to be jointly and separately compliant to all terms of the original authorization.

Paragraph: 34

Not distinguishing between border and non-border areas for EA licensing in this band will promote confusion, interference, and ineffective spectrum use.

Paragraph: 35

Applicants should employ independent due diligence to determine the viability of their business plan in all EAs they are pursuing.

Paragraph: 42

We do not believe that geographic licensing should be permitted in the 928/952/956 MHz band. Interference issues and the reality that service area coverages of typical MAS users does not correspond to the EA designations substantiate this position.

The proposal to allow other than point-to-multipoint operation is contrary to the intent of the MAS band. The predicted result of this excessive flexibility will be interference and universal chaos at the expense of all licensees, including those responsible for maintenance, protection, and operation of the nation's critical infrastructure. It is not good spectrum management policy to expect the MAS band to fulfill the needs and objectives of several other radio services at the expense of those using the band for its original allocation, fixed point-to-multipoint service. Particularly, when the historic designated use has limited allocation, and a rapidly expanding need exists, which is founded in providing safe and reliable public service.

Paragraph: 43

Communication between mobile masters and fixed remotes is spectrally efficient due to the low emissions required. Communication between fixed masters and mobile remotes should be prohibited because those needs are more properly addressed by the mobile radio services.

Paragraph: 44

Determination of regulatory status should be clearly defined by the presence or absence of a fee-for-service relationship between the licensee and any subscribers of the licensee's services. Licensees who provide a service using radio spectrum to subscribers, even though the communications service itself may not constitute the end product, should be subject to telecommunications carrier regulations. Typical examples of such a relationship would be central alarm and vending monitoring services which use MAS radio to provide subscriber alarm or monitoring information.

The proposal to establish a presumption that all MAS geographic area licensees are telecommunications carriers is inaccurate, and will be particularly flawed if private systems must become geographic area licensees. The determination that the 928/952/956 MHz bands are private

Paragraph: 52

In consideration of the fact the 932/941 MHz band was allocated to provide relief for the exhausted 928/952 MHz band, it may be in the public interest to reexamine those applications which do not propose to provide subscriber service. Those applicants could be invited to reapply for participation in a lottery for a limited number of channels to satisfy some of their internal requirements not previously met. The balance of the channels could be made available for auction.

An additional alternative to consider is to reallocate any un-licensed frequencies remaining at the close of the auction for private use, subject to award by lottery or some other method.

Paragraph: 53, 54, 55

Auction of spectrum in these bands prohibits reasonable access to all but very few public service providers (quasi-public safety agencies) because of their financial structure. As a result, the services provided to the public in maintenance and operation of the nations infrastructure would be severely hampered. Therefore, we assert that the auctions, as proposed in the Notice of Proposed Rulemaking, are not in the public's best interest.

Paragraph: 56

Co-primary mobile operations are not supported, as described above. Mobile units crossing EAs will create end user confusion and operational interference detrimental to all EA licensees.

Paragraph: 57

We do not agree with the position that MAS applicants had available substitutes to their applications for the 932/941 MHz channels in the lottery process. In the most areas throughout the country, the potential applicants have been waiting many years for MAS frequencies to become available. In many cases, business plans were put on hold awaiting spectrum relief. In other cases, even less desirable alternate methods (i.e., less reliable and more costly telephone and subscriber radio) of fulfilling communications requirements have been employed by necessity.

Use of this spectrum should be encouraged to be point-to-multipoint operations rather than paging, or voice applications which can be satisfied in other spectrum such as currently allocated, and also proposed by this Notice of Proposed Rulemaking.

Paragraph: 67

Mobile operation, particularly for law enforcement mobile data systems should be allowed on a secondary basis to fixed applications. Each political subdivision of substantial size could benefit from use of at least one MAS channel. As such, channels should be available on an exclusive first-come-first-served basis to either Federal or Public Safety applicants.

The proposed "random selection procedures" approach for authorizing mutually exclusive applications requires further clarification. First-come-first-served processes might be implemented as a more concrete methodology.

The process implemented for authorization and use of these channels should also be applied to the additional MAS channels requested for utility (quasi-public safety) set-aside.

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